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Study group for heavy chemistry. Chairman: Dr Toepelmann (fnu).
 Study group for potash and non-ore mining. Chairman: Dr Slaue (fnu).
 Other experts assigned to various undetermined study groups included:
 Dr Franz Busch of the Kaliwerke Kaiserroda,
 Dr Sevory (fnu) of the Institute for Research Work on Mineral Salts,
 Dr Hans Albert Lehmann of the Chemical Institute of the Humboldt University in East Berlin,
 Prof Dr Arthur Simon of the Dresden Institute of Technology,
 Prof Dr Herbert Staude, chief of the Physical - Chemical Institute of Leipzig University.

4. During the second part of the Leipzig conference, reports on research work conducted in 1953 were given. Dr Robert Griesbach of VEB Farbenfabrik at Wolfen spoke on the improvement of methods of producing sulfuric acid from gypsum. The production of cement from desulfurized materials was also treated in this report. A rotary kiln 6.5 meters long was used for the technical experiments and the main raw material was gypsum ($\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$) or anhydride (CaSO_4). The utilization of small coke lignite proved unfavorable because of the nitrous gases developing in this case produced turbidity in the sulfuric acid obtained and led to the development of amidosulfuric acid ($\text{H}_2\text{N}_2\text{SO}_3\text{H}$). In order to remove the NO gases, the sulfate gases (schwefelsaure Gase) were washed in a solution of sodium thiosulfate ($\text{Na}_2\text{S}_2\text{O}_3 \cdot 5\text{H}_2\text{O}$). In order to produce cement klinker through the burning of calcium sulfate, clay, sand and iron waste were added to the gypsum. The temperature of reaction was about $1,350^\circ\text{C}$. The aim was to produce cement with a maximum possible content of iron.
5. Other papers read at the conference concerned the production of sulfuric acid on the basis of magnesium sulfate salts (MgSO_4). Dr Schwarz (fnu) reported on technical roasting of raw materials containing magnesium sulfate in the fluidized bed (Fliebbett), in the eddying coat bed (Wirbelschichtbett), and in the free fluid bed (Schwebbett). Prof Dr Herbert Staude discussed thermo-dynamic problems and the reactions of solid bodies in high temperatures. In connection with the production of SO_2 gases, he spoke on disintegration temperatures of magnesium sulfate and calcium sulfate and the determination of their specific heats up to $1,200^\circ\text{C}$. An assistant to Professor Arthur Simon of the Dresden Institute of Technology, who at present does research work on the Raman spectroscopy of hydrogen sulfates, reported on experiments with magnesium sulfates. Among others, 1:1 mixtures of magnesium sulfate and quartz were heated up to 950°C and it was found that up to 35 percent of the two components entered into reaction with each other when a high amount of activating agents (Mineralisatoren) were added. Dr Heide (fnu) of the VEB "Wilhelm Pieck" Kunstfaserwerk (synthetic fibre plant) at Schwarza reported on the reclaiming of sodium sulfate in the form of thenardite (Na_2SO_4) (sic) from the spinning bath for rayon and staple fibres. For the preparation of the spinning bath 100 to 130 grs of sulfuric acid, 350 grs of sodium sulfate and 8 to 10 grs of zinc sulfate were added per liter. In 1953, about 70 tons of thenardite were produced daily at Schwarza.
6. Dr Robert Griesbach spoke on experiments made at VEB Farbenfabrik Wolfen for the production of alumina (Al_2O_3) from clay on the basis of a combined process. In 1953, a sum of 320,000 eastmarks was spent on this research order. Griesbach reported that normal calcined clays were processed with sulfuric acid or heated after coke and calcium sulfate had been added. As a result, aluminum sulfate was obtained, or the calcined clays were leached with a soda solution which then yielded alumina. The allocation of 2.2 million eastmarks had been requested for the erection of a factory designed to produce alumina on the basis of the process developed at Wolfen. Other research orders in the field of alumina briefly mentioned at the conference included the breaking-up of clays by hydrochloric acid, a project for which 750,000 eastmarks

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had been invested; the processing of clays rich in silica acid for which 600,000 eastmarks had been invested; the manufacture of topazeryolite ($Al_2F_2SiO_4$) to be used for the production of alumina at Ruedersdorf; the reduction of aluminum chloride with water; and the thermic production of aluminum at VEB Chemiewerk Greiz-Doehlau.

7. Dr Wehner (fnu) of the VEB Elektrochemisches Kombinat at Bitterfeld read a long paper on the utilization of industrial salt waste solutions (Salz-Endlaugen), of which approximately 500,000 tons were produced in 1953. This output is expected to rise to 750,000 tons by 1960. Basic research work on the utilization of these waste solutions has almost been completed. A processing plant for these solutions is to be erected in the vicinity of VEB Kaliwerk Bleicherode in the eastern Harz Mts. It is planned to process these waste solutions which contain mainly magnesium chloride and water, sodium chloride, potassium chloride, and magnesium sulfate, with gaseous hydrochloric acid. During the first stage of this process, sodium chloride and potassium chloride are obtained in the form of salts, and in the second stage magnesium chloride in the form of bishoffite ($MgCl_2 \cdot 6H_2O$) and carnalite ($MgCl_2 \cdot KCl \cdot 6H_2O$) are produced by the further processing of these salts with hydrochloric acid. Through thermic treatment by bishoffite and carnalite a very pure alkali-free magnesium oxide and a very pure hydrochloric acid is obtained. It was expected that approximately 100 tons of magnesium oxide could be obtained as a by-product daily.
8. Dr Arthur Lehmann, Chief of the Test Laboratory at VEB Stickstoffwerk Piesteritz (nitrogen plant) spoke on reactions between calcium oxide, ammonia, and coal for the production of calcium cyanamide. A sum of 230,000 eastmarks had been allocated for this research order. Dr Hepke (fnu), chief of the phosphorus plant at Piesteritz read a paper on the influences of acids on oxidizing compounds and the concentration of rare earths obtained from phosphorus slags. A total of 225,000 eastmarks had been allocated for this research work. Dr Fröck (fnu) of the Leuna works spoke on the synthesis of urea, a project for which 30,000 eastmarks had been allocated.

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